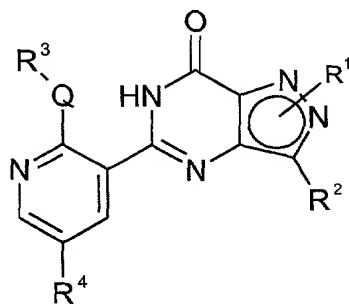


Claims

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1. A process for the preparation of a compound of general formula (I):



I

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or a pharmaceutically or veterinarily acceptable salt, pro-drug, polymorph and/or solvate thereof, wherein

Q represents O or NR<sup>5</sup>

15

R<sup>1</sup> represents H, lower alkyl, Het, alkylHet, aryl or alkylaryl (which latter five groups are all optionally substituted and/or terminated with one or more substituents selected from halo, cyano, nitro, lower alkyl, halo(loweralkyl), OR<sup>6</sup>, OC(O)R<sup>7</sup>, C(O)R<sup>8</sup>, C(O)OR<sup>9</sup>, C(O)NR<sup>10</sup>R<sup>11</sup>, NR<sup>12</sup>R<sup>13</sup> and SO<sub>2</sub>NR<sup>14</sup>R<sup>15</sup>)

20

R<sup>2</sup> represents H, halo, cyano, nitro, OR<sup>6</sup>, OC(O)R<sup>7</sup>, C(O)R<sup>8</sup>, C(O)OR<sup>9</sup>, C(O)NR<sup>10</sup>R<sup>11</sup>, NR<sup>12</sup>R<sup>13</sup>, SO<sub>2</sub>NR<sup>14</sup>R<sup>15</sup>, lower alkyl, Het, alkylHet, aryl or alkylaryl (which latter five groups are all optionally substituted and/or terminated with one or more substituents selected from halo, cyano, nitro, lower alkyl, halo(loweralkyl), OR<sup>6</sup>, OC(O)R<sup>7</sup>, C(O)R<sup>8</sup>, C(O)OR<sup>9</sup>, C(O)NR<sup>10</sup>R<sup>11</sup>, NR<sup>12</sup>R<sup>13</sup> and SO<sub>2</sub>NR<sup>14</sup>R<sup>15</sup>)

25

R<sup>3</sup> represents H, lower alkyl, alkylHet or alkylaryl (which latter three groups are all optionally substituted and/or terminated with one or more substituents selected from halo, cyano, nitro, lower alkyl, halo(loweralkyl), OR<sup>6</sup>, OC(O)R<sup>7</sup>, C(O)R<sup>8</sup>, C(O)OR<sup>9</sup>, C(O)NR<sup>10</sup>R<sup>11</sup>, NR<sup>12</sup>R<sup>13</sup> and SO<sub>2</sub>NR<sup>14</sup>R<sup>15</sup>)

R<sup>4</sup> represents H, halo, cyano, nitro, halo(loweralkyl), OR<sup>6</sup>, OC(O)R<sup>7</sup>, C(O)R<sup>8</sup>, C(O)OR<sup>9</sup>, C(O)NR<sup>10</sup>R<sup>11</sup>, NR<sup>12</sup>R<sup>13</sup>, NR<sup>16</sup>Y(O)R<sup>17</sup>, N[Y(O)R<sup>17</sup>]<sub>2</sub>, SOR<sup>18</sup>,

SO<sub>2</sub>R<sup>19</sup>, C(O)AZ, lower alkyl, lower alkenyl, lower alkynyl, Het, alkylHet, aryl, alkylaryl (which latter seven groups are all optionally substituted and/or terminated with one or more substituents selected from halo, cyano, nitro, lower alkyl, halo(loweralkyl), OR<sup>6</sup>, OC(O)R<sup>7</sup>, C(O)R<sup>8</sup>, C(O)OR<sup>9</sup>, C(O)NR<sup>10</sup>R<sup>11</sup>, NR<sup>12</sup>R<sup>13</sup> and SO<sub>2</sub>NR<sup>14</sup>R<sup>15</sup>)

Y represents C or S(O)

A represents lower alkylene

Z represents OR<sup>6</sup>, halo, Het or aryl (which latter two groups are both optionally substituted with one or more substituents selected from halo, cyano, nitro, lower alkyl, halo(loweralkyl), OR<sup>6</sup>, OC(O)R<sup>7</sup>, C(O)R<sup>8</sup>, C(O)OR<sup>9</sup>, C(O)NR<sup>10</sup>R<sup>11</sup>, NR<sup>12</sup>R<sup>13</sup> and SO<sub>2</sub>NR<sup>14</sup>R<sup>15</sup>)

R<sup>10</sup> and R<sup>11</sup> independently represent H or lower alkyl (which latter group is optionally substituted and/or terminated with one or more substituents selected from halo, cyano, nitro, lower alkyl, halo(loweralkyl), OR<sup>6</sup>, OC(O)R<sup>7</sup>, C(O)R<sup>8</sup>, C(O)OR<sup>9</sup>, C(O)NR<sup>10a</sup>R<sup>11a</sup>, NR<sup>12</sup>R<sup>13</sup>, SO<sub>2</sub>NR<sup>14</sup>R<sup>15</sup> and NR<sup>20</sup>S(O)<sub>2</sub>R<sup>21</sup> or Het or aryl optionally substituted with one or more of said latter thirteen groups) or one of R<sup>10</sup> and R<sup>11</sup> may be lower alkoxy, amino or Het, which latter two groups are both optionally substituted with lower alkyl

R<sup>10a</sup> and R<sup>11a</sup> independently represent R<sup>10</sup> and R<sup>11</sup> as defined above, except that they do not represent groups that include lower alkyl, Het or aryl, when these three groups are substituted and/or terminated (as appropriate) by one or more substituents that include one or more C(O)NR<sup>10a</sup>R<sup>11a</sup> and/or NR<sup>12</sup>R<sup>13</sup> groups

R<sup>12</sup> and R<sup>13</sup> independently represent H or lower alkyl (which latter group is optionally substituted and/or terminated with one or more substituents selected from OR<sup>6</sup>, C(O)OR<sup>9</sup>, C(O)NR<sup>22</sup>R<sup>23</sup> and NR<sup>24</sup>R<sup>25</sup>), one of R<sup>12</sup> or R<sup>13</sup> may be C(O)-lower alkyl or C(O)Het (in which Het is optionally substituted with lower alkyl), or R<sup>12</sup> and R<sup>13</sup> together represent C<sub>3-7</sub> alkylene (which alkylene group is optionally unsaturated, optionally substituted by one or more lower alkyl groups and/or optionally interrupted by O or NR<sup>26</sup>)

R<sup>14</sup> and R<sup>15</sup> independently represent H or lower alkyl or R<sup>14</sup> and R<sup>15</sup>, together with the nitrogen atom to which they are bound, form a heterocyclic ring

$R^{16}$  and  $R^{17}$  independently represent H or lower alkyl (which latter group is optionally substituted and/or terminated with one or more substituents selected from  $OR^6$ ,  $C(O)OR^9$ ,  $C(O)NR^{22}R^{23}$  and  $NR^{24}R^{25}$ ) or one of  $R^{16}$  and  $R^{17}$  may be Het or aryl, which latter two groups are both optionally substituted with lower alkyl

$R^5$ ,  $R^6$ ,  $R^7$ ,  $R^8$ ,  $R^9$ ,  $R^{18}$ ,  $R^{19}$ ,  $R^{20}$ ,  $R^{22}$ ,  $R^{23}$ ,  $R^{24}$  and  $R^{25}$  independently represent H or lower alkyl

$R^{18}$  and  $R^{19}$  independently represent lower alkyl

$R^{21}$  represents lower alkyl or aryl

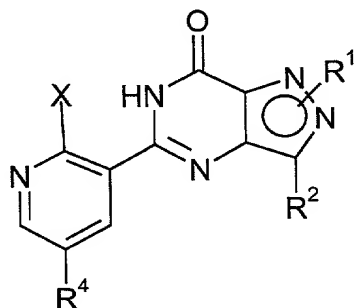
$R^{26}$  represents H, lower alkyl, aryl,  $C(O)R^{27}$  or  $S(O)_2R^{28}$

$R^{27}$  represents H, lower alkyl or aryl

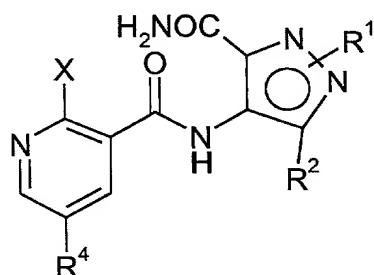
$R^{28}$  represents lower alkyl or aryl

Het represents an optionally substituted four- to twelve-membered heterocyclic group, which group contains one or more heteroatoms selected from nitrogen, oxygen, sulphur and mixtures thereof

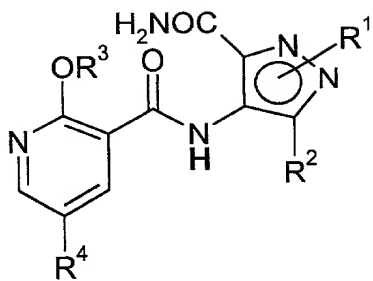
said process comprising reacting a compound of formula (II), (III), (IV) or (V) in the presence of  $^-OR^3$  and a hydroxide trapping agent or, alternatively, in the case of compounds of formulae (IV) or (V) reacting in the presence of an auxiliary base and a hydroxide trapping agent (i.e.  $^-OR^3$  is substituted by the auxiliary base)



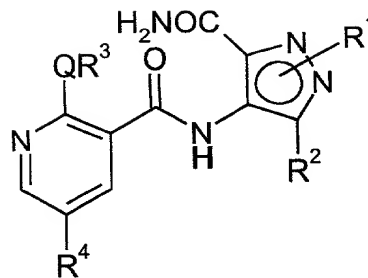
(II)



(III)



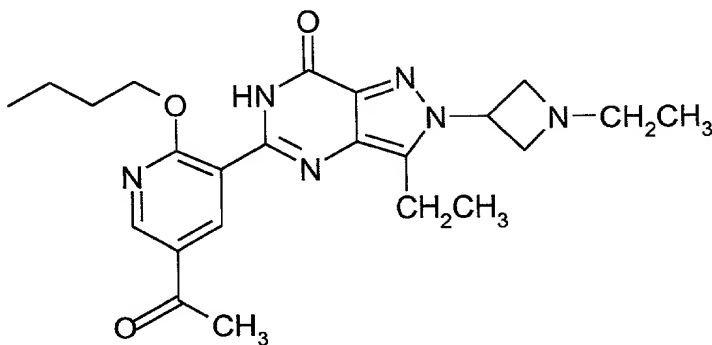
(IV)



(V)

wherein X is a leaving group and Q and R<sup>1</sup> to R<sup>4</sup> are as defined above.

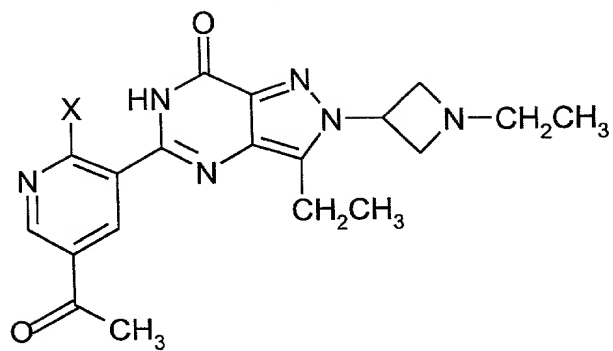
2. A process for the preparation of a compound of formula (IA):



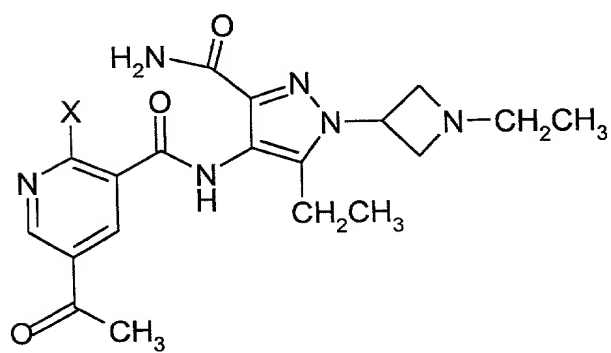
(IA)

said process comprising reacting a compound of formula (IIA), (IIIA) or (IVA) respectively

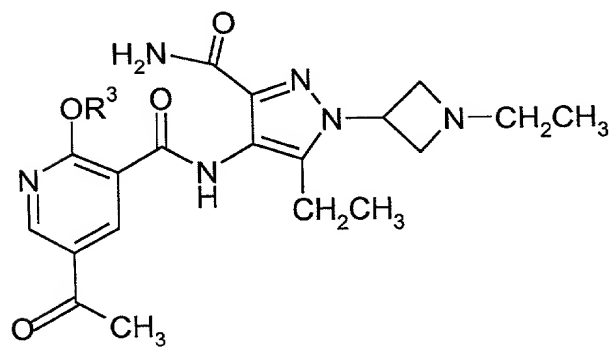
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(IIA)



(IIIA)



(IVA)

in the presence of  $\text{OR}^3$  and a hydroxide trapping agent, or alternatively in the case of compounds of formula (IVA) reacting in the presence of a hydroxide trapping agent and an auxiliary base, wherein  $\text{OR}^3$  in the case of formation of compound (IA) and (IVA) is  $\text{CH}_3(\text{CH}_2)_3\text{O}-$  and wherein X in formulae (IIA) and (IIIA) is a leaving group.